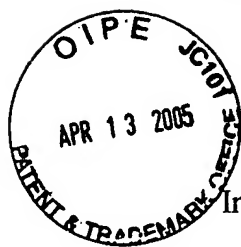


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## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

John L. Margrave et al.

§ Serial No: 09/809,885

§

§ Filed: March 16, 2001

For: FUNCTIONALIZED  
SINGLE-WALL CARBON NANOTUBES

§

§ Group Art Unit: 1754

§

§ Confirmation Number: 7715

§

Atty Dkt: 11321-P013D2  
(formerly 11321-P026US)

§ Examiner: Stuart L Hendrickson

§

Mail Stop RCE  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

## CERTIFICATE OF MAILING

This document is being deposited with the U.S. Postal Service as First Class Mail with sufficient postage, in an envelope addressed to Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450, on April 11, 2005.

SERENA BELLER

**DECLARATION OF RICHARD SMALLEY, PH.D.**  
**UNDER 37 C.F.R. § 1.132**

1. I am one of the named inventors of the above-referenced Application.
2. I am also one of the co-authors of Chen *et al.*, "Chemical attachment of organic functional groups to single walled carbon nanotube material," *Journal of Materials Research*, Vol. 13, No. 9, Sept. 1998, pp. 2423-2431 ("*Chen*").
3. As a co-author of *Chen*, I aware of the content of *Chen*, including the following sentence appearing on page 2427:

The spectra show that dichlorocarbene moieties become attached to the SWNT's but not to the catalyst nanoparticles.

4. This statement does not mean the dichlorocarbene moieties were covalently bonded to the sidewall of the single wall carbon nanotubes, nor would a

person of ordinary skill in the art of the Application understand that this is what was being said in this sentence.


5. Rather, a person of ordinary skill in the art of the Application would understand this sentence to mean the dichlorocarbene moieties were attached to the single wall carbon nanotube material, which includes the amorphous carbon coating surrounding the single wall carbon nanotubes.

6. Such an interpretation of this sentence is consistent with the entirety of *Chen*, including the conclusion of *Chen* appearing on page 2429, namely that "our results are consistent with the addition of chemical functionalities to the surface of the SWNT bundles, but we cannot distinguish between attachment to the walls of the SWNT's and attachment to the amorphous carbon that is present on the walls in current samples."

7. I do not believe now, and I did not believe at the time of *Chen*, that *Chen* revealed a process for covalent bonding of moieties/substituents to the sidewall of single wall carbon nanotubes. It is my belief that the first time such covalent bonding of moieties/substituents to the sidewall of single wall carbon nanotubes occurred when I and others invented the invention disclosed and claimed in the present Application.

8. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

April 5, 2005  
Date

  
Richard Smalley, Ph.D.